

J O S T E C

BUILDING REGULATIONS COMPLIANCE SERVICES

REPORT TITLE: NOISE ASSESSMENT FOR GOLDBLOCKS NURSERY, SCHOOL ROAD, READING,
RG31 5AT.

REPORT REFERENCE: 25414-01

ISSUED TO: THE KEEN PARTNERSHIP

ISSUED BY: ANTONIO MARIA GRANIERI

DATE: 13 August 2025

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1.0 Introduction

- 1.01 JosTec has been commissioned to undertake a noise survey and assessment for The Keen Partnership, to accompany a retrospective planning application for the continued use of the premises as a nursery (Goldilocks) at 77 School Road, Reading, RG31 5AT. It is understood that currently 90+ children are attending the nursery at any time, and that this volume of attendance has been maintained over the past 10+ years.
- 1.02 The purpose of this report is to support the client's planning application for said development by determining existing ambient noise levels, including noise levels produced by the nursery, to assess the need for mitigation.
- 1.03 This report presents a comparison of the measured noise levels to criteria stated in BS8233:2014, and comments on potential general mitigation requirements to achieve suitable internal and external noise levels.

2.0 Development Description

- 2.0.1 The site is located on 77 School Road, Reading, RG31 5AT. The site is situated in a predominantly residential area.
- 2.0.2 The site is bounded by:
- Residential properties to the north (adjacent to site)
 - residential properties to the west (adjacent to site)
 - residential properties to the south on Walnut Way, (approx. 5m away from site)
 - a dental clinic and Corwen Road to the east (25-35m away from site)
- 2.0.3 The main noise source likely to disrupt the residents surrounding the nursery is noise generated by road traffic on School Road, Walnut Way and Corwen Road.
- 2.0.4 The monitoring took place at the front and at the rear of the site.

2.1 Locations of Monitors

- 2.1.1 Two Type 1 sound level meters were installed on the front and rear of the nursery.
- 2.1.2 The sound level meters were fixed to their own tripod and were installed outdoors in proximity of the nursery car park at the front and in proximity of the playground at the rear of the site.
- 2.1.3 The positions were chosen due to site accessibility and safety of monitoring kit and engineer. The positions are representative of the residential noise sensitive receptors nearest to the nursery.
- 2.1.4 The sound level meters were installed on the 28th of July 2025 and started measuring at 10:00 at the front and 10:14 at the rear. The sound level meters were collected on the 29th of July 2025, after stopping the measurement at 09:50 at the front and 09:59 at the rear.
- 2.1.5 Figure 1 and Figure 2 show where the monitors were installed, and Figure 3 shows such location on an aerial view from online maps.

Figure 1 - Noise Monitor Location - Front



Figure 2 - Noise Monitor Location - Rear



- 2.1.6 Measurements were made in 15 minute periods, on 1 second averaging, to allow for the removal of anomalies and increased accuracy. The data was averaged into $L_{Aeq16hr}$ daytime and L_{Aeq8hr} night-time with data also recorded for L_{Amax} in both day and night periods for the BS8233:2014 assessment.
- 2.1.7 The monitoring was conducted using 1x Type 1 Svantek SV971A sound level meter and outdoor microphone protection at the front, and 1x Type 1 Svantek SV307 sound level meter and outdoor microphone protection at the rear.
- 2.1.8 The measurements were taken by a fully qualified engineer with MIOA status with the institute of Acoustics.

- 2.1.9 All measurements were taken after a field calibration was undertaken to ensure accuracy and repeatability of measurements.
- 2.1.10 Further data such as wind speed, wind direction, rainfall intensity, temperature and cloud cover were all recorded at the beginning and end of the assessment at the monitoring location.
- 2.1.11 Any anomalies (such as noise by the engineer during setup and collection of the kit) were removed from the survey for a true reflection of the ambient levels in the vicinity. This was done by recording audio throughout the survey at each location and listening back through the files during the analysis process to confirm what was recorded manually during the survey.

2.2 Plan Views of Site with Designated Work Areas

Figure 3 - Site Location



3.0 Noise Assessment Criteria

- 3.0.1 There are no specific standards or guidance relating to noise produced by nurseries, however, BS8233:2014 provides guidance on suitable internal noise levels for residential buildings, which are the noise sensitive receptor type nearest to the nursery.

BS8233:2014: Guidance on Sound Insulation and Noise Reduction for Buildings

- 3.0.2 British Standard 8233:2014 is principally intended to assist in the design of new dwellings; however, the Standard does state that it may be used in the assessment of noise from new sources being brought to existing dwellings.
- 3.0.3 The WHO guideline values are appropriate to what are termed "critical health effects". This means that the limits are at the lowest noise level that would result in any psychological or physiological effect. The WHO/BS 8233 guideline noise values are summarised in Table 1:

Table 1 - Guideline Noise Values

Guidance Document	L_{AeqT}	L_{AMax}	Outcome
World Health Organisation "Community Noise 2000"	55dB		Serious annoyance, daytime and evening. (Continuous noise, outdoor living areas)
	50dB		Moderate annoyance, daytime and evening. (Continuous noise, outdoor living areas).
	35dB		Moderate annoyance, daytime and evening. (Continuous noise, dwellings, indoors)
	30dB		Sleep disturbance, night-time (indoors)
		60dB	Sleep disturbance, windows open at night. (Noise peaks outside bedrooms, external level).
		45dB	Sleep disturbance at night (Noise peaks inside bedrooms, internal level)
BS 8233:2014 "Sound Insulation and noise reduction for buildings"	55dB		Upper limit for external steady noise. (gardens and patios).
	50dB		Desirable limit for external steady noise. (gardens and patios).
	L_{Aeq} 16 hours = 35 dB		Resting, living room day. (Internal – steady noise)
	L_{Aeq} 16 hours = 40 dB		Dining, dining room day. (Internal – steady noise)
	L_{Aeq} 16 hour = 35 dB		Sleeping, bedroom day (Internal – steady noise)
	L_{Aeq} 8 hours = 30 dB		Sleeping, bedroom day (Internal – steady noise)

- 3.0.4 For L_{AeqT} criteria the time base (T) given in the documents is 16 hours for daytime limits and 8 hours for night time limits. All surveys are conducted on 1 hour daytime and 15 minute night

values – based on 1 second readings on a Type 1 sound level meter. The readings are taken every 5 mins for noise to allow the elimination of erroneous data if required.

- 3.0.5 The WHO guidelines are also concerned with the $L_{A_{Max}}$ for night-time sleep disturbance. The guideline states:

“For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB $L_{A_{Fmax}}$ more than 10-15 times per night”

- 3.0.6 On this basis, for the purpose of assessing night-time $L_{A_{Fmax}}$ noise events, it is considered appropriate to adopt the 10th highest $L_{A_{Fmax}}$ noise event occurring in a typical night-time (23:00 – 07:00) period.
- 3.0.7 Audio recordings are taken throughout the measurements to allow for further assessments on high levels. Listening to the audio and performing tonal analysis will allow anomalies to be removed from the data, if required.

4.0 Results

4.1 Noise Assessment

4.1.1 Table 2 below presents measured noise levels at the monitoring locations rounded to the nearest decibel for the daytime period 07:00 – 23:00. The night-time period 23:00 – 07:00 was not included in the assessment.

4.1.2 Figure 4 and Figure 5 present the entire baseline noise levels obtained at the front and rear monitoring locations respectively. Weather conditions at the time of installation and collection are presented in Table 3.

4.1.3 The main noise source was noise generated by road traffic on the surroundings roads.

Table 2 - Baseline Noise Monitoring Results

Noise Monitoring Location	$L_{Aeq,16h}$
Front	52 dBA
Rear	55 dBA

Figure 4 – Baseline Noise Data - Front

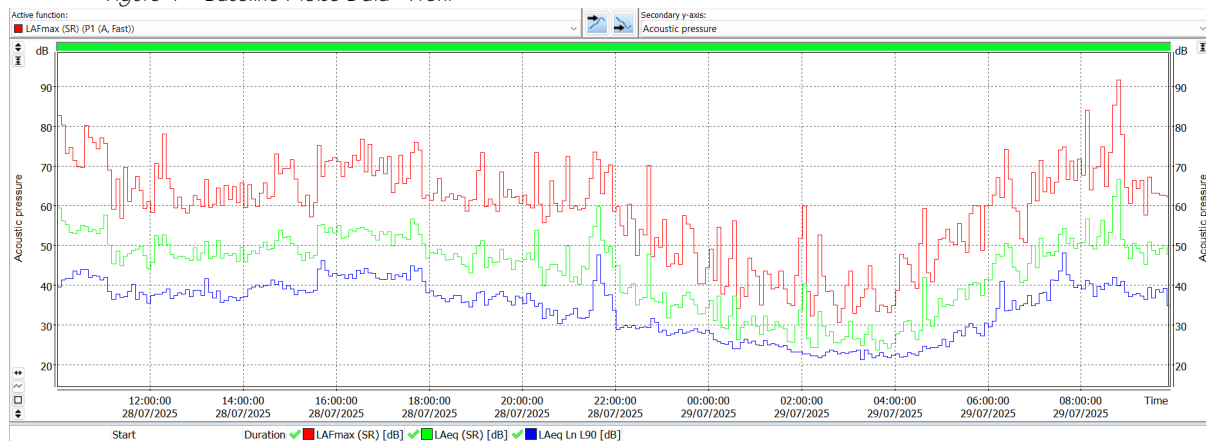


Figure 5 - Baseline Noise Data - Rear

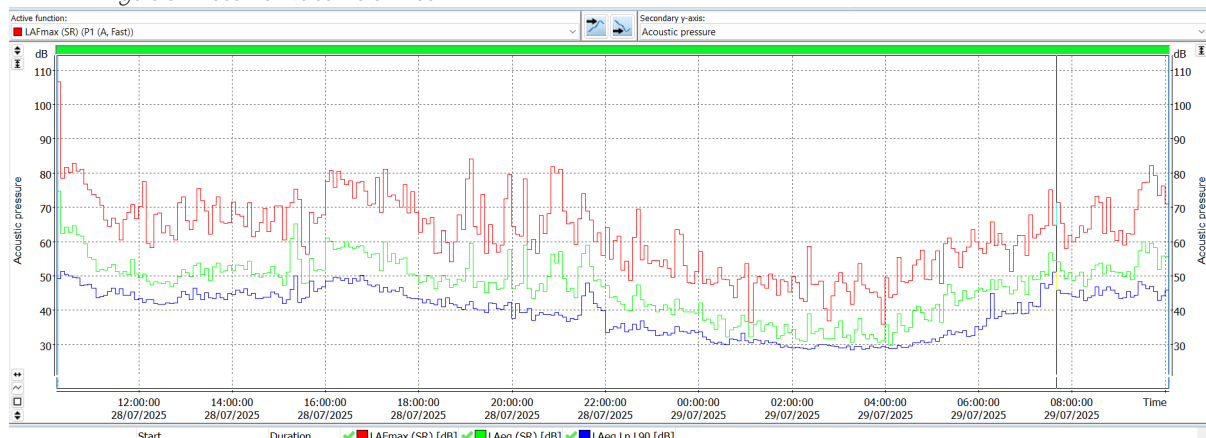


Table 3 - Weather Conditions

Day/Time	Cloud Cover	Temperature (Celsius)	Presence of fog/snow/ice	Wind Speed (m/s)	Wind Direction
Installation	None	19	No	<5	E
Collection	None	17	No	<5	N

4.2 Comparison of Results to BS8233

Table 4 - Comparison of Results to BS8233

	L _{AeqT} (16h Day)	BS8233 & WHO Internal noise	BS8233 & WHO External Noise	Difference to L _{Aeq} (internal)	Difference to L _{Aeq} (external)
Front	52dBA	35dBA	55dBA	+17dBA	-3dBA
Rear	55dBA			+20dBA	0dBA

5.0 Observations and Further Discussions

5.0.1 The measured L_{Aeq,16h} values for both the front and rear areas of the nursery are shown in Table 4. The day period noise levels are 17dBA above the BS8233 daytime criteria at the front, and 20dBA above the BS8233 daytime criteria at the rear. The noise levels are 3dB below the noise criteria for external amenity areas at the front and are matched at the rear.

5.0.2 The noise levels shown in Table 4 can now be compared to BS8233:2014 internal noise level criteria. BS8233 assumes that a standard double-glazed window will provide up to 15dB reduction when open (with some council guidelines leaning on the side of caution and assuming a 10dB reduction) and up to 30dB reduction when closed. Based on the above, the criteria for good living and resting conditions specified in BS8233 would not be achieved with an open, double-glazed windows. Each of the BS8233 criteria would however be achieved with standard double-glazed windows when kept closed, as demonstrated in Table 5 below.

Table 5 - Comparison of Predicted Noise Levels to BS8233 Internal Criteria with Open and Closed Windows

	L _{AeqT} (16h Day)	BS8233 & WHO Internal noise	Corrected Internal Noise Level – Open Window (-15dB)	Corrected Internal Noise Level – Closed Window (-30dB)
Front	52dBA	35dBA	37dBA (+2dB)	22dBA (-13dB)
Rear	55dBA		40dBA (+5dB)	25dBA (-10dB)

6.0 Conclusion

- 6.0.1 The assessment demonstrates that existing noise levels exceed BS8233:2014 internal criteria at nearby residential receptors with windows open for natural ventilation. With closed double-glazed windows, a more realistic scenario for the majority of the year, internal noise levels would remain within acceptable limits. External amenity areas criteria are met both at the front and the rear of the nursery.
- 6.0.2 It should be noted that these measured noise levels represent a composite of both existing ambient noise and operational noise from the nursery activities. It is understood that no noise complaints were received over the past decade despite the nursery operating at this volume of attendance. This proves that the acoustic environment, while resulting technically above BS8233:2014 internal noise criteria with open windows, does not result in unacceptable disturbance of neighbouring residential properties.
- 6.0.3 Should complaints arise in the future, proportionate noise management measures could be implemented, including controlled outdoor play periods, managed arrival and departure times, and enhanced staff awareness of noise considerations. Acoustic fencing could be considered as a potential mitigation measure, however it is not deemed necessary at this stage given the absence of complaints in the past decade. Such measures could be revisited in the future should serious noise complaints emerge.

7.0 Credentials

Name	Title	Credentials
Antonio Maria Granieri MSc, BA(Hons)	Senior Acoustic Consultant	Member of the Institute of Acoustics

Appendix A – Acoustic Terminology

Parameter	Description
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s_1 and s_2 is given by $20 \log_{10} (s_1/s_2)$. The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is $20\mu\text{Pa}$. The threshold of normal hearing is in the region of 0 dB and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.
dB(A), L_x	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
Free-field	Sound pressure level measured outside, far away from reflecting surfaces (except the ground), usually taken to mean at least 3.5 metres
Façade	Sound pressure level measured at a distance of 1 metre in front of a large sound reflecting object such as a building façade.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level recorded during a noise event with a period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. $L_{A10,18h}$ is the A – weighted arithmetic average of the 18 hourly $L_{A10,1h}$ values from 06:00-24:00.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. Generally used to describe background noise level.

Appendix B - Noise Survey Instrumentation

Type	Manufacturer	Model	Serial Number
SLM	SvanTek	SV307	100911
Microphone		ST30	78375
Calibrator		SV33B	109969

Type	Manufacturer	Model	Serial Number
SLM	SvanTek	SV971	147728
Microphone		ST30	148354
Calibrator		SV33B	109969